CLAIM AMENDMENTS

1. *(Original)* A method of producing a cell population depleted of undifferentiated stem cells, comprising:

   a) genetically altering undifferentiated stem cells in the population so that they contain a nucleic acid molecule comprising the structure P–X, wherein X is nucleic acid sequence that causes expression of a cell surface antigen, and P is a transcriptional control element operatively linked to X, such that the surface antigen is expressed in the undifferentiated stem cells; and

   b) depleting undifferentiated cells from the population by combining the cells with a ligand specific for the antigen.

2. *(Previously Amended)* The method of claim 14, wherein the undifferentiated stem cells are primate pluripotent stem (pPS) cells.

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3. *(Previously Amended)* The method of claim 15, wherein the ligand is an antibody or a lectin.

4. *(Previously Amended)* The method of claim 15, comprising combining the cells with ligand specific for the antigen, and separating cells that have not bound the ligand.

5. *(Previously Amended)* The method of claim 15, comprising combining the cell population or progeny thereof with complement and antibody specific for the antigen under conditions that permit the complement to lyse cells to which the antibody has bound.

6. *(Previously Amended)* The method of claim 14, wherein X encodes a glycosyltransferase.

7. *(Original)* The method of claim 6, wherein X encodes an α(1,3)galactosyltransferase.

8. *(Original)* The method of claim 6, wherein X encodes an ABO blood Group transferase.

9. *(Previously Amended)* The method of claim 14, wherein P is an OCT-4 promoter or a promoter of telomerase reverse transcriptase (TERT).

10. *(Previously Amended)* The method of claim 14, wherein P–X is an introduced heterologous molecule.

11. *(Previously Amended)* The method of any of claim 14, wherein P is an endogenous transcriptional control element.

12. *(Previously Amended)* The method of claim 15, further comprising genetically altering the cell population such that P–X is transiently expressed in undifferentiated cells in the population.

13. *(Previously Amended)* The method of claim 15, further comprising genetically altering the cell population such that P–X is inherited by progeny of cells in the population, becoming expressed in undifferentiated progeny.

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14. *(Currently Amended)* A method of producing differentiated cells, comprising

a) obtaining a cell population comprising undifferentiated stem cells that have been genetically altered to contain a nucleic acid molecule comprising the structure P–X, wherein X is nucleic acid sequence that causes expression of a cell surface antigen, and P is a transcriptional control element operatively linked to X, such that the surface antigen is expressed in undifferentiated cells; and

b) causing at least some undifferentiated cells in the population to differentiate.

15. *(Original)* The method of claim 14, further comprising depleting undifferentiated cells from the population by combining the cells with a ligand specific for the antigen.

16. *(Original)* A stem cell genetically altered to express a carbohydrate antigen not normally expressed by the cell.

17. *(Original)* The stem cell of claim 16, wherein expression of the carbohydrate antigen is controlled by a transcriptional control element that preferentially causes expression in undifferentiated cells.

18. *(Original)* The stem cell of claim 17, wherein the transcriptional control element is an OCT-4 promoter or a promoter of telomerase reverse transcriptase (TERT).

19. *(Original)* The stem cell of claim 16, genetically altered with a glycosyltransferase.

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20. *(Original)* The stem cell of claim 19, wherein the glycosyltransferase is an α(1,3)galactosyltransferase.

21. *(Original)* The stem cell of claim 19, wherein the glycosyltransferase is an ABO blood Group transferase.

22. *(Original)* The stem cell of claim 16, which is a human embryonic stem (hES) cell.